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FILE 'HOME' ENTERED AT 10:40:38 ON 30 DEC 2007

=> FILE REG		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 10:41:15 ON 30 DEC 2007  
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STRUCTURE FILE UPDATES: 28 DEC 2007 HIGHEST RN 959740-17-1  
DICTIONARY FILE UPDATES: 28 DEC 2007 HIGHEST RN 959740-17-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

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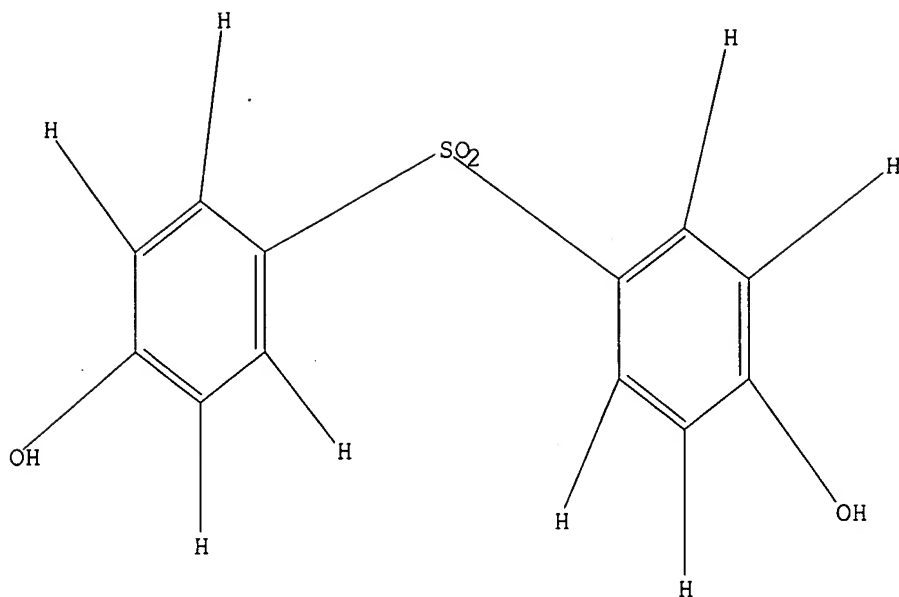
REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=>  
Uploading C:\Program Files\Stnexp\Queries\GL-1.str

L1 STRUCTURE UPLOADED

=> D L1  
L1 HAS NO ANSWERS  
L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> S L1 FULL

FULL SEARCH INITIATED 10:42:07 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 27152 TO ITERATE

100.0% PROCESSED 27152 ITERATIONS

1658 ANSWERS

SEARCH TIME: 00.00.01

L2 1658 SEA SSS FUL L1

=> FILE CAPLUS

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

172.55

172.76

FILE 'CAPLUS' ENTERED AT 10:42:27 ON 30 DEC 2007

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FILE COVERS 1907 - 30 Dec 2007 VOL 148 ISS 1

FILE LAST UPDATED: 28 Dec 2007 (20071228/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> S L2

L3 3876 L2

=> S L3 AND SULFONATION AGENT OR PHENOLSULFONIC ACID

19512 SULFONATION

879341 AGENT

208 SULFONATION AGENT

(SULFONATION(W)AGENT)

2041 PHENOLSULFONIC

4504164 ACID

1858 PHENOLSULFONIC ACID

(PHENOLSULFONIC(W)ACID)

L4 1859 L3 AND SULFONATION AGENT OR PHENOLSULFONIC ACID

=> S L4 AND DEHYDRATION REACTION

103270 DEHYDRATION

3121558 REACTION

5632 DEHYDRATION REACTION

(DEHYDRATION(W)REACTION).

L5 3 L4 AND DEHYDRATION REACTION

=> D L5 IBIB ABS HITSTR 1-3

L5 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:522039 CAPLUS

DOCUMENT NUMBER: 143:26282

TITLE: Preparation of colorless carboxylic acid anhydrides and acyloxybenzenesulfonic acids

INVENTOR(S): Iidaka, Kazuhiro; Suzuki, Nobuyoshi

PATENT ASSIGNEE(S): Kao Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2005154295	A	20050616	JP 2003-391615	20031121
PRIORITY APPLN. INFO.:			JP 2003-391615	20031121

OTHER SOURCE(S): CASREACT 143:26282; MARPAT 143:26282

AB (R1CO)2O (I; R1 = C5-17 alkyl, alkenyl) are prepared by reaction of R1CO2H (R1 = same as I) with (R2CO)2O (R2 = C1-3 alkyl, alkenyl) at 130-180° and cooling the reaction mixts. at 0.1-3.0°/min. R2CO2C6H4-n(R1)nSO3.1/aM1-p (R1 = C1-18 alkyl, alkenyl; R2 = C1-17 alkyl, alkenyl; M1 = H, cation; n = 0-2; a = valence of M1), useful as bleaching activators for clothes (no data), are prepared from I and 1/bM2.OC6H4-n(R1)nSO3.1/aM1 (R1, M1, a, n = same as above; M2 = H, cation; b = valence of M2). Lauric acid was dehydrated by Ac2O at 120° under 27-1.3 kPa for 2 h and at 150° for 4 h and the reaction mixture was cooled to 60° over 90 min to give lauric anhydride with APHA 40.

L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:823343 CAPLUS

DOCUMENT NUMBER: 139:330367

TITLE: Process for manufacturing 2,4'-dihydroxydiphenylsulfone

INVENTOR(S): Yoshino, Takeshi; Tomoda, Yuichi; Taniguchi, Norihiro; Igarashi, Kazuaki; Hasegawa, Takeo

PATENT ASSIGNEE(S): Nikka Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

DOCUMENT TYPE: CODEN: JKXXAF  
LANGUAGE: Patent  
FAMILY ACC. NUM. COUNT: Japanese 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003300951	A	20031021	JP 2002-102541	20020404
PRIORITY APPLN. INFO.:			JP 2002-102541	20020404

AB The title process comprises (a) separating 4,4'-dihydroxydiphenylsulfone (I) by crystallization from a mixture of I, 2,4'-dihydroxydiphenylsulfone (II), phenylsulfonic acid, and phenol (obtained by reaction of phenol with sulfuric acid or phenolsulfonic acid) to give a mixture (in which the amount of II is larger than the amount of I), (b) removing phenol (e.g., by distillation) to decrease the concentration of phenol in the mixture to < 10 weight%, (c) adding water to the mixture and crystallizing II and filtering the mixture to collect II. II is a developer for thermal recording material. The title process is simple and gives II in high yield.

L5 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2003:686019 CAPLUS  
DOCUMENT NUMBER: 139:205092  
TITLE: Process for manufacturing 2,4'-dihydroxydiphenyl sulfone.  
INVENTOR(S): Yoshino, Takeshi; Taniguchi, Norihiro; Igarashi, Kazuaki; Hasegawa, Takeo  
PATENT ASSIGNEE(S): Nikka Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003246775	A	20030902	JP 2002-46802	20020222
JP 4011364	B2	20071121		
PRIORITY APPLN. INFO.:			JP 2002-46802	20020222

AB In the process for manufacturing 2,4'-dihydroxydiphenyl sulfone (I) by dehydration/condensation reaction of phenol with phenolsulfonic acid or phenol with sulfuric acid, fuming sulfuric acid or sulfuric anhydride, 4,4'-dihydroxydiphenyl sulfone is added to the starting material. I is a developer for thermal recording material. The title process gives I in high yield.

=> S L3 AND DEHYDRATION REACTION  
 103270 DEHYDRATION  
 3121558 REACTION  
 5632 DEHYDRATION REACTION  
 (DEHYDRATION(W)REACTION)  
 L6 9 L3 AND DEHYDRATION REACTION

=> D L6 IBIB ABS HITSTR 1-9

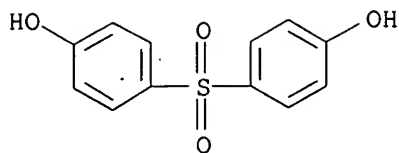
L6 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:287831 CAPLUS  
 DOCUMENT NUMBER: 140:321107  
 TITLE: Process for preparation of high-purity  
 4,4'-dihydroxydiphenylsulfone  
 INVENTOR(S): Ogata, Eiji; Oi, Fumio; Yanase, Norio; Nate, Nobuyuki  
 PATENT ASSIGNEE(S): Konishi Chemical Ind. Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 20 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004029020	A1	20040408	WO 2003-JP12049	20030922
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003266552	A1	20040419	AU 2003-266552	20030922
CN 1684943	A	20051019	CN 2003-823044	20030922
US 2005272956	A1	20051208	US 2005-529074	20050324
PRIORITY APPLN. INFO.:			JP 2002-279199	A 20020925
			WO 2003-JP12049	W 20030922

OTHER SOURCE(S): CASREACT 140:321107

AB This invention pertains to a method for producing 4,4'-dihydroxydiphenylsulfone having an extremely high purity, which comprises subjecting phenol and either a sulfonating agent or phenylsulfonic acid to a dehydration reaction, and is characterized by conducting the dehydration reaction in the presence of a nonpolar aromatic solvent while suspending the dihydroxydiphenyl sulfones generated, mixing a polar solvent with the suspension resulting from the reaction to dissolve at least part of the dihydroxydiphenylsulfones, and then crystallizing 4,4'-dihydroxydiphenylsulfone. For example, phenol was treated with 98% H2SO4 in mesitylene to give 4,4'-dihydroxydiphenylsulfone (83%) with 99.5% purity.

IT 80-09-1P  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of high-purity dihydroxydiphenylsulfones)  
 RN 80-09-1 CAPLUS  
 CN Phenol, 4,4'-sulfonylbis- (CA INDEX NAME)



L6 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:823343 CAPLUS

DOCUMENT NUMBER: 139:330367

TITLE: Process for manufacturing 2,4'-dihydroxydiphenylsulfone

INVENTOR(S): Yoshino, Takeshi; Tomoda, Yuichi; Taniguchi, Norihiro; Igarashi, Kazuaki; Hasegawa, Takeo

PATENT ASSIGNEE(S): Nikka Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003300951	A	20031021	JP 2002-102541	20020404

PRIORITY APPLN. INFO.: JP 2002-102541 20020404

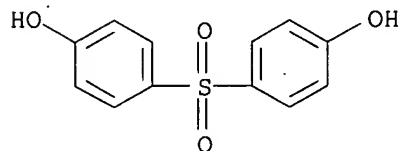
AB The title process comprises (a) separating 4,4'-dihydroxydiphenylsulfone (I) by crystallization from a mixture of I, 2,4'-dihydroxydiphenylsulfone (II), phenylsulfonic acid, and phenol (obtained by reaction of phenol with sulfuric acid or phenolsulfonic acid) to give a mixture (in which the amount of II is larger than the amount of I), (b) removing phenol (e.g., by distillation) to decrease the concentration of phenol in the mixture to < 10 weight%, (c) adding water to the mixture and crystallizing II and filtering the mixture to collect II.

II is a developer for thermal recording material. The title process is simple and gives II in high yield.

IT 80-09-1P, 4,4'-Dihydroxydiphenylsulfone  
 RL: BYP (Byproduct); REM (Removal or disposal); PREP (Preparation); PROC (Process)  
 (process for manufacturing pure 2,4'-dihydroxydiphenylsulfone)

RN 80-09-1 CAPLUS

CN Phenol, 4,4'-sulfonylbis- (CA INDEX NAME)



L6 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:686019 CAPLUS

DOCUMENT NUMBER: 139:205092

TITLE: Process for manufacturing 2,4'-dihydroxydiphenyl sulfone

INVENTOR(S): Yoshino, Takeshi; Taniguchi, Norihiro; Igarashi, Kazuaki; Hasegawa, Takeo

PATENT ASSIGNEE(S): Nikka Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

CODEN: JKXXAF

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003246775	A	20030902	JP 2002-46802	20020222
JP 4011364	B2	20071121		

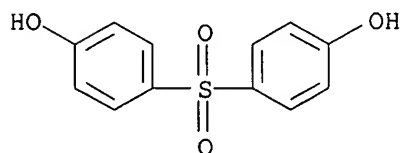
PRIORITY APPLN. INFO.: JP 2002-46802 20020222

AB In the process for manufacturing 2,4'-dihydroxydiphenyl sulfone (I) by dehydration/condensation reaction of phenol with phenolsulfonic acid or phenol with sulfuric acid, fuming sulfuric acid or sulfuric anhydride, 4,4'-dihydroxydiphenyl sulfone is added to the starting material. I is a developer for thermal recording material. The title process gives I in high yield.

IT 80-09-1P, 4,4'-Dihydroxydiphenyl sulfone  
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (process for manufacturing 2,4'-dihydroxydiphenyl sulfone)

RN 80-09-1 CAPLUS

CN Phenol, 4,4'-sulfonylbis- (CA INDEX NAME)



L6 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:678778 CAPLUS

DOCUMENT NUMBER: 139:230468

TITLE: Process for preparation of dihydroxydiphenylsulfone isomeric mixtures

INVENTOR(S): Oi, Fumio; Yanase, Norio; Nate, Nobuyuki

PATENT ASSIGNEE(S): Konishi Chemical Ind. Co., Ltd., Japan

SOURCE: PCT Int. Appl., 20 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003070695	A1	20030828	WO 2003-JP1836	20030220
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2003313160	A	20031106	JP 2002-319967	20021101
AU 2003211551	A1	20030909	AU 2003-211551	20030220
PRIORITY APPLN. INFO.:			JP 2002-46629	A 20020222
			JP 2002-319967	A 20021101

OTHER SOURCE(S): CASREACT 139:230468

AB This invention pertains to a method for producing high-quality dihydroxydiphenylsulfone isomeric mixts. which cause color development (color formation) in non-image areas when used in thermal recording paper as the developer. Specifically, a process for the production of dihydroxydiphenylsulfone isomeric mixts., characterized by subjecting a solution or suspension of a crude isomeric mixture comprising 2,4'-dihydroxydiphenylsulfone and 4,4'-dihydroxydiphenylsulfone in an organic solvent to cooling and filtration successively; a process for the production of dihydroxydiphenylsulfone isomeric mixts., characterized by mixing a solution or suspension of a crude isomeric mixture comprising 2,4'-dihydroxydiphenylsulfone and 4,4'-dihydroxydiphenylsulfone in an organic solvent with an aqueous basic solution to extract the isomeric mixture into the aqueous

basic solution, removing the resulting organic solvent layer by liquid-liquid separation,

adding an acid to the resulting aqueous basic solution to precipitate crystals, and

recovering the crystals by filtration. For example, phenol was treated with concentrate H<sub>2</sub>SO<sub>4</sub> in 1,2-dichlorobenzene to give a mixture of 2,4'-dihydroxydiphenylsulfone and 4,4'-dihydroxydiphenylsulfone (35/65).

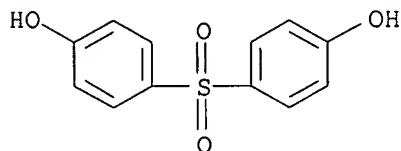
IT 80-09-1P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(preparation of dihydroxydiphenylsulfone isomeric mixts. by sulfonation)

RN 80-09-1 CAPLUS

CN Phenol, 4,4'-sulfonylbis- (CA INDEX NAME)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:656735 CAPLUS

DOCUMENT NUMBER: 139:199089

TITLE: Process for production of mixture of dihydroxydiphenyl sulfone isomers

INVENTOR(S): Oi, Fumio; Yanase, Norio; Nate, Nobuyuki

PATENT ASSIGNEE(S): Konishi Chemical Ind. Co., Ltd., Japan

SOURCE: PCT Int. Appl., 13 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003068733	A1	20030821	WO 2003-JP1149	20030205
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,				



KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

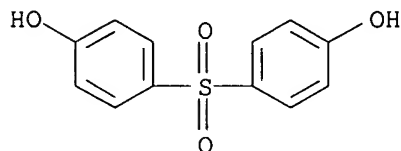
JP 2003238523 A 20030827 JP 2002-38443 20020215  
 AU 2003207214 A1 20030904 AU 2003-207214 20030205

PRIORITY APPLN. INFO.: JP 2002-38443 A 20020215  
 WO 2003-JP1149 W 20030205

AB A process for production of a mixture of dihydroxydiphenyl sulfone isomers comprising reacting phenol with a sulfonating agent in an organic solvent is characterized in that phenol is used in an amount of 2 to 4 mol per mol of the sulfonating agent, the organic solvent is used in an amount 0.5 to 6.5 times (by weight) the theor. yield of the mixture of the dihydroxydiphenyl sulfone isomers, and the products of the reaction are obtained as a mixture of isomers. The title compds. are useful as developers for thermal printing paper. The title process is industrially advantageous.

IT 80-09-1P, 4,4'-Dihydroxydiphenyl sulfone  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (process for production of mixture of dihydroxydiphenyl sulfone isomers by reacting phenol with sulfonating agent in organic solvent)

RN 80-09-1 CAPLUS  
 CN Phenol, 4,4'-sulfonylbis- (CA INDEX NAME)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:71587 CAPLUS  
 DOCUMENT NUMBER: 128:140519

TITLE: Preparation of dihydroxydiphenyl sulfones as developers for thermal printing paper

INVENTOR(S): Ogata, Eiji; Yanase, Tsuneo; Nate, Nobuyuki  
 PATENT ASSIGNEE(S): Konishi Kagaku Kogyo Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

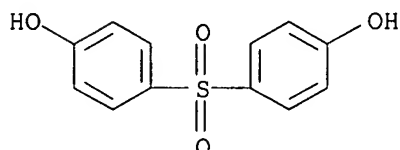
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10025277	A	19980127	JP 1996-183108	19960712
JP 3890387	B2	20070307		

PRIORITY APPLN. INFO.: JP 1996-183108 19960712

AB Dihydroxydiphenyl sulfones (I), useful as developers for thermal printing paper (no data), are prepared by dehydration of 1 mol equiv of sulfonating agents with 2.0-4.0 mol equiv of PhOH in 2.0-6.5 times weight of o-C6H4Cl2 (to theor. yield of I), as reaction mixture contain 2-20 weight% unreacted PhOH (to an amount of unreacted PhOH and o-C6H4Cl2) and 2.0-7.0 times weight amount of unreacted PhOH and o-C6H4Cl2 (to theor. yield of I) after reaction end, crystallization of 4,4'-dihydroxydiphenyl sulfone from the reaction mixts. at 80-160°, and isolation of 2,4'-dihydroxydiphenyl sulfone from a filtrate. PhOH was treated with H2SO4 in o-C6H4Cl2 (3.9 times weight to theor. yield of I) at 150-180° for 5 h to give a reaction mixture

containing 4.8 weight% unreacted PhOH (to an amount of o-C6H4Cl2 and unreacted PhOH) and 4.1 times weight amount of unreacted PhOH and o-C6H4Cl2 (to theor. yield of I). The reaction mixture was cooled. at 120° to give 42.4% wet cake of 4,4'-I, while filtrate was cooled at 25° to give 46.9% wet cake of 2,4'-I.

IT 80-09-1P, 4,4'-Dihydroxydiphenyl sulfone  
 RL: IMF (Industrial manufacture); PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of dihydroxydiphenyl sulfones by dehydration of phenol with sulfonating agents and crystallization)  
 RN 80-09-1 CAPLUS  
 CN Phenol, 4,4'-sulfonylbis- (CA INDEX NAME)



L6 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:193899 CAPLUS

DOCUMENT NUMBER: 116:193899

TITLE: process for the preparation of 4,4'-dihydroxyphenyl sulfone (4,4'-bisphenol S) by condensation of sulfuric acid and phenol

INVENTOR(S): Mulhall, Steven E.

PATENT ASSIGNEE(S): Aristech Chemical Corp., USA

SOURCE: PCT Int. Appl., 13 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

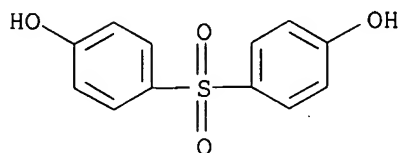
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9202493	A1	19920220	WO 1991-US4437	19910624
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
CA 2066178	A1	19920207	CA 1991-2066178	19910624
EP 495097	A1	19920722	EP 1991-919236	19910624
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 05500522	T	19930204	JP 1991-516588	19910624
PRIORITY APPLN. INFO.:			US 1990-564493	A 19900806
			WO 1991-US4437	W 19910624

OTHER SOURCE(S): CASREACT 116:193899

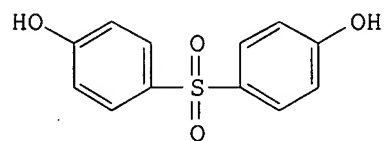
AB A process for the preparation of 4,4'-dihydroxyphenyl sulfone (I), i.e., bisphenol S, comprises the treatment of H2SO4 and phenol in a 1:2 to 1:10 ratio at a temperature gradient from 40-100° to 190-205°. The water formed during the reaction is removed by distillation and then 0.1-5.0 equiv volume of solvent is added for bisphenol S and the mixture is cooled to 120° to cause precipitation of I. I is isolated by filtration and 2,4'-bisphenol S thus obtained in the filtrate is recycled and isomerized (no data). The gradual heating process effects removal of water and phenol from the product mixture and forces the dehydration reaction to go to completion. H2SO4 (22.62 g, 96.6%) was added to phenol (100.41 g) at 70° and the mixture was heated to 130° for 1 h and then heated to reflux and water and phenol were removed by distillation; then toluene was added to cause precipitation of I which was obtained  
 >99.5% pure after recrystn.

IT 80-09-1P, 4,4'-Bisphenol S  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, process for)  
 RN 80-09-1 CAPLUS  
 CN Phenol, 4,4'-sulfonylbis- (CA INDEX NAME)



L6 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:428885 CAPLUS  
 DOCUMENT NUMBER: 115:28885  
 TITLE: Process for preparing 4,4'-dihydroxydiphenyl sulfone  
 INVENTOR(S): Ogata, Eiji; Nate, Nobuyuki  
 PATENT ASSIGNEE(S): Konishi Chemical Industry Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9104245	A1	19910404	WO 1990-JP1179	19900914
W: US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE				
JP 03101656	A	19910426	JP 1989-239523	19890914
JP 07091261	B	19951004		
JP 03206073	A	19910909	JP 1989-340699	19891229
JP 08002861	B	19960117		
JP 03206074	A	19910909	JP 1989-340700	19891229
JP 08002862	B	19960117		
EP 443046	A1	19910828	EP 1990-913547	19900914
EP 443046	B1	19940413		
R: DE, GB				
US 5189223	A	19930223	US 1991-678332	19910501
US 5241121	A	19930831	US 1992-904887	19920625
PRIORITY APPLN. INFO.:			JP 1989-239523	A 19890914
			JP 1989-340699	A 19891229
			JP 1989-340700	A 19891229
			WO 1990-JP1179	W 19900914
			US 1991-752589	B1 19910828
OTHER SOURCE(S):		CASREACT 115:28885; MARPAT 115:28885		
GI				

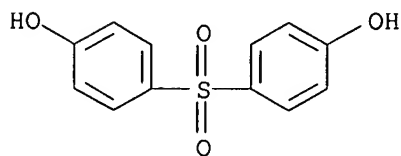


I

AB The title compound (I) was prepared by heating phenol with sulfuric acid in mesitylene and by converting 2,4'-dihydroxydiphenyl sulfone, formed in the dehydration reaction, to I by heating at isomerization

temperature Thus, phenol was heated with 98% H<sub>2</sub>SO<sub>4</sub> in mesitylene at 145° and the distillate was heated at 165° for 5 h to give 93.0% I.

IT 80-09-1P, 4,4'-Dihydroxydiphenyl sulfone  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from phenol and sulfuric acid)  
RN 80-09-1 CAPLUS  
CN Phenol, 4,4'-sulfonylbis- (CA INDEX NAME)



L6 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1989:7848 CAPLUS  
DOCUMENT NUMBER: 110:7848  
TITLE: purification of bisphenol sulfones by heating in water and/or hydroxy compounds  
INVENTOR(S): Kushima, Hiroshi; Makita, Takashi; Yamamoto, Naoki  
PATENT ASSIGNEE(S): Nikka Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63048261	A	19880229	JP 1986-192148	19860819
JP 07107043	B	19951115		

PRIORITY APPLN. INFO.: JP 1986-192148 19860819

AB Bisphenol sulfones (prepared by a dehydration reaction of phenols and H<sub>2</sub>SO<sub>4</sub>), useful as monomers and developers for thermal recording papers (no data), were purified by heating at 100-200° in OH-containing organic compds. and/or H<sub>2</sub>O to obtain less colored products.

Thus,

2,6-xylenol (I) was treated with H<sub>2</sub>SO<sub>4</sub> at 140-180° for 4 h to give [3,5,4-Me<sub>2</sub>(HO)C<sub>6</sub>H<sub>2</sub>]<sub>2</sub>SO<sub>2</sub> (II) of absorbance 0.219, which was stirred in I at 140-160° for 15 min to give II of absorbance 0.031, vs. 0.195 for heating in xylene.

IT 80-09-1P, Bis(4-hydroxyphenyl) sulfone  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and purification of, by heating in hydroxy compds. and/or water)  
RN 80-09-1 CAPLUS  
CN Phenol, 4,4'-sulfonylbis- (CA INDEX NAME)

